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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,681	04/14/2004	Mitsuharu Saikawa	5905.0111-01	4897

22852 7590 10/14/2009

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EXAMINER	
DEODHAR, OMKAR A	

ART UNIT	PAPER NUMBER
3714	

MAIL DATE	DELIVERY MODE
10/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/823,681	SAIKAWA ET AL.
	Examiner	Art Unit
	OMKAR A. DEODHAR	3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9,17,20 and 28-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9,17,20,28-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Final Rejection

Response to Arguments & Amendment

Applicant argues that Yasui fails to render obvious the claims, as amended. Examiner respectfully disagrees. Specifically, Applicant argues that Yasui fails to teach "nullifying a transparency value…where: the two or more of the plurality of gradation polygons are larger than corresponding ones of the shadow models, the corresponding ones of the shadow models do not overlap each other, and the two or more of the plurality of gradation polygons that correspond to the ones of the shadow models overlap," as in amended claim 9. (Remarks, Pages 10, 11).

As described in the Specification, nullifying transparency values allows overlapping shadow images to appear in the same degree of darkness as if there was no overlap. At other times, overlapping shadow portions are displayed more darkly than portions where shadows do not overlap. In both cases, the disclosed purpose is realistic image generation. (See Specification, 4/14/2004, Pages 22-23).

Applicant argues that Yasui's disclosure of using an OR operation to arrive at shadow mask data does not disclose the amended claim limitations. (Remarks, Page 10). While Yasui's method of processing opaque polygons, blending translucent polygons and shadowing process (Col. 3. Lines 33-42) may differ from Applicant's invention, Yasui's process nevertheless yields the exact same predictable results of realistically generating images in game programs. Thus, Examiner believes that Yasui renders Applicant's claimed invention obvious.

Applicant argues lack of motivation to achieve the claimed combination. Although KSR foreclosed a rigid application of the TSM test, one of ordinary skill in the art, looking to realistically generate images during a game, would realize that various modifications to Yasui's disclosure would achieve the same predictable results. Since the object in both Applicant's invention & Yasui is to render scenes with accurate shadowing & object rendition, there is ample suggestion and motivation to make modifications yielding predictable results.

The claim amendments are addressed in the rejection below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9, 17, 20 & 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasui et al. (US 6,320,580).

Claims 9, 20:

Yasui discloses an image processing device (Abstract) comprising a processor (Figure 1, 40) for setting a character model; and setting a polygon model a plurality of light source models illuminating the character model, (See Col. 1. Lines 20-25, disclosing that image processing apparatuses generate polygons from which displayable objects are rendered on a screen.)

creating a plurality of shadow models to display shadows created by the plurality of light source models, the plurality of shadow models having non-color values and non-transparency values; setting a plurality of gradation polygons that overlap with a portion of corresponding ones of the plurality of shadow models as seen from a viewpoint, (See Figure 28),

the gradation polygons having non-color values and transparency values for the corresponding ones of the shadow models; (Figure 28 shows portions of polygons overlapping with shadowed regions. Parameters such as alpha values represent the degree of transparency and color related data. See Figure 3, showing Polygon Data including location, texture, color and alpha value. See Figure 30 showing the shadowing process.)

Yasui does not disclose displaying a color for the shadow models based on a background color value behind the shadow models, a transparency value being set for the background color, and a corresponding transparency value being set for the corresponding gradation polygons, wherein where two or more of the plurality of gradation polygons overlap, the transparency value for the background color is set to the non-transparency value to make the background color non-transparent so that the

color of one of the shadow models closer to the viewpoint is calculated based on the background color value behind a closer one of the shadow models and the corresponding transparency value set for the corresponding gradation polygon for the closer one of the shadow models.

(It is well-known in the art that in an image processing device, polygons forming objects are generated & displayed on the screen. Numerous polygons are used to form an object. Rendering processes blend polygon colors to properly display images. This is accomplished by varying the transparency of individual polygons comprising an object. Yasui confirms this in his disclosure of the state of the art in the Background of the Invention, in Columns 1 & 2.

Operating a system in the claimed manner would have been obvious, in view of Yasui, at the time of Applicant's invention & would have yielded the predictable results of rendering images on a screen allowing players to interact with the system. For instance, if an image of a baseball bat making contact with a baseball is shown, the player would see part of the bat, with the ball directly in front of it. The player would not see through the opaque baseball.

As explained above, Yasui teaches varying polygon transparency such that regions of polygons are opaque, transparent or translucent. Based on the viewpoint & the object sought to be displayed, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to apply known teachings in the claimed manner so that objects could be contrasted from a background image.)

Regarding the amended claim limitations:

Wherein a transparency value is nullified where: the two or more of the plurality of gradation polygons are larger than corresponding ones of the shadow models, the corresponding ones of the shadow models do not overlap each other, and the two or more of the plurality of gradation polygons that correspond to the ones of the shadow models overlap.

(As described in the Specification, nullifying transparency values allows overlapping shadow images to appear in the same degree of darkness as if there was no overlap. At other times, overlapping shadow portions are displayed more darkly than portions where shadows do not overlap. In both cases, the disclosed purpose is realistic image generation. (See Specification, 4/14/2004, Pages 22-23).

Yasui's method of processing opaque polygons, blending translucent polygons and processing shadow images (Col. 3. Lines 33-42) achieves the same results as in Applicant's claimed invention because ultimately, realistic images are generated in game programs. It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to apply Yasui's polygon blending and shadowing processes to vary overlapping images' darkness to render realistic images during games. This yields predictable results.

Claim 17:

Yasui discloses an image processing device for performing an image processing movement which generates a shadow of a motion character moving on a display screen, when lights are irradiated onto the motion character by a plurality of light sources, (Col. 2. Lines 22-29 teaches shadow processing. Figure 28 shows shadow

volumes SV1-3 formed by light sources LS1-3; teaching a plurality of light sources), comprising:

a shadow model modeling means for modeling a plurality of shadow models having color information and a transparency of 0% designated corresponding to each of the plurality of light sources,

(Col. 3. Lines 34-42 teach varying transparency, this may range from 0% [opaque] to 100% [transparent].);

a gradation polygon modeling means for modeling a plurality of gradation polygons, the plurality of gradation polygons being modeled to overlap with corresponding ones of the plurality of shadow models as seen from a viewpoint (on the screen), the plurality of gradation polygons being set with a transparency of the corresponding ones of the plurality of shadow models, (Refer to the discussion with respect to claim 9),

a filter polygon modeling means for modeling a filter polygon for cutting off the transparency set to a background color for a gradation polygon closer to the viewpoint

(Col. 4. Lines 52-57 teach displaying shadow areas on the polygons rendered and the efficient blending of overlapping polygons by varying transparency. This is interpreted as teaching substantially the same function specified by the claimed filter polygon modeling means and also produces substantially the same results of varying polygon transparency.)

Yasui does not disclose:

a pixel generation means that generates pixels to represent the shadow model based on the background color, the transparency set for the background color, and the transparency set for the corresponding gradation polygon,

wherein where two or more of the plurality of gradation polygons overlap the filter polygon is arranged between the overlapping gradation polygons so as to alter the transparency for the background color so that the color for a shadow model closer to the viewpoint is calculated based on the background color behind the closer shadow model and the corresponding transparency set for the corresponding gradation polygon for the closer shadow model.

(Refer to the discussion with respect to claim 9; explaining that this process is rendered obvious. Note that since Yasui discloses image processing, pixel generation is taught).

Regarding the amended claim limitations:

Wherein a transparency value is nullified where: the two or more of the plurality of gradation polygons are larger than corresponding ones of the shadow models, the corresponding ones of the shadow models do not overlap each other, and the two or more of the plurality of gradation polygons that correspond to the ones of the shadow models overlap.

(Refer to the discussion of claim 9; explaining that this process is rendered obvious).

Claim 28:

(The claim limitations are addressed as presented with respect to claims 9, 17 & 20.)

Claims 29, 30:

Yasui teaches the invention substantially as claimed but does not teach wherein the filter polygon is arranged in advance on one of the plurality of gradation polygons that corresponds to one of the shadow polygons.

Col. 4. Lines 52-57 teaches displaying shadow areas on the polygons rendered and the efficient blending of overlapping polygons by varying transparency. As explained with respect to the “means for” language in claim 17, this disclosure is interpreted as teaching substantially the same function specified by the claimed filter polygon modeling means and also produces substantially the same results of varying polygon transparency.

As explained in Applicant’s disclosure, the filter polygon is used to modify the transparency of regions overlapping it. (Specification, Pages 23, 24 & Figure 10). It would have been obvious to a person of ordinary skill in the art at the time of Applicant’s invention to apply a filter polygon underneath overlapping polygons to vary the transparency of an overlapping region. This yields the same predictable results of rendering realistic images of shadowed areas.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMKAR A. DEODHAR whose telephone number is (571)272-1647. The examiner can normally be reached on M-F: 8AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OAD/

/Corbett Coburn/
Primary Examiner
AU 3714